

EXEMPLAR **SOLUTIONS** **CHEMISTRY**

Chapter : 2 Electrochemistry.

Class
12



Powered by



Chapter 2 Electrochemistry.

I. Multiple Choice Questions (Type-I)

1. Which cell will measure standard electrode potential of copper electrode?

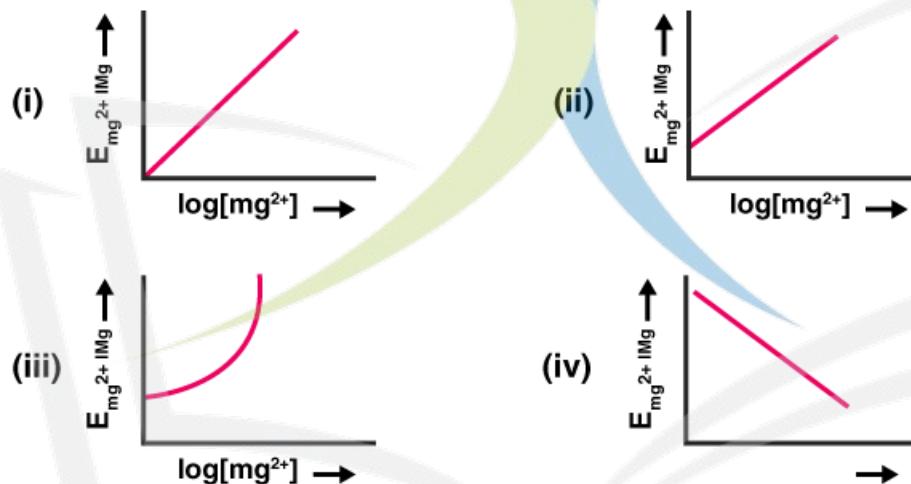
- (i) Pt (s) H₂(g,0.1 bar) H⁺ (aq.,1 M) Cu²⁺(aq.,1M) Cu
- (ii) Pt(s) H₂ (g, 1 bar) H⁺ (aq.,1 M) Cu²⁺ (aq.,2 M) Cu
- (iii) Pt(s) H₂(g, 1 bar) H⁺ (aq.,1 M) Cu²⁺ (aq.,1 M) Cu
- (iv) Pt(s) H₂ (g, 1 bar) H⁺(aq.,0.1 M) Cu²⁺ (aq.,1 M) Cu

Solution:

Option (iii) is the answer.

2. Electrode potential for Mg electrode varies according to the equation

$E_{\text{Mg}^{2+}/\text{Mg}} = E^{\circ}_{\text{Mg}^{2+}/\text{Mg}} - 0.0591/2 \log 1/\text{[Mg}^{2+}\text{]}$. The graph of $E_{\text{Mg}^{2+}/\text{Mg}}$ Vs $\log [\text{Mg}^{2+}]$ is



Solution:

Option (ii) is the answer.

3. Which of the following statement is correct?

- (i) E_{Cell} and ΔrG of cell reaction both are extensive properties.
- (ii) E_{Cell} and ΔrG of cell reaction both are intensive properties.
- (iii) E_{Cell} is an intensive property while ΔrG of cell reaction is an extensive property.
- (iv) E_{Cell} is an extensive property while ΔrG of cell reaction is an intensive property.

Solution:

Option (iii) is the answer.

4. The difference between the electrode potentials of two electrodes when no current is drawn through the cell is called _____.

- (i) Cell potential
- (ii) Cell emf
- (iii) Potential difference
- (iv) Cell voltage

Solution:

Option (ii) is the answer.

5. Which of the following statement is not correct about an inert electrode in a cell?

- (i) It does not participate in the cell reaction.
- (ii) It provides surface either for oxidation or for the reduction reaction.
- (iii) It provides a surface for conduction of electrons.
- (iv) It provides a surface for a redox reaction.

Solution:

Option (iv) is the answer.

6. An electrochemical cell can behave like an electrolytic cell when _____.

- (i) $E_{\text{cell}} = 0$
- (ii) $E_{\text{cell}} > E_{\text{ext}}$
- (iii) $E_{\text{ext}} > E_{\text{cell}}$
- (iv) $E_{\text{cell}} = E_{\text{ext}}$

Solution:

Option (iii) is the answer.

7. Which of the statements about solutions of electrolytes is not correct?

- (i) The conductivity of the solution depends upon the size of ions.
- (ii) Conductivity depends upon the viscosity of the solution.
- (iii) Conductivity does not depend upon solvation of ions present in solution.
- (iv) The conductivity of the solution increases with temperature.

Solution:

Option (iii) is the answer.

8. Using the data given below to find out the strongest reducing agent.

$$E^\circ \text{Cr}_2\text{O}_7^{2-}/\text{Cr}^{3+} = 1.33\text{V}$$

$$E^\circ \text{MnO}_4^-/\text{Mn}^{2+} = 1.51\text{V}$$

$$E^\circ \text{Cl}_2/\text{Cl}^- = 1.36\text{V}$$

$$E^\circ \text{Cr}^{3+}/\text{Cr} = -0.74\text{V}$$

- (i) Cl^-
- (ii) Cr
- (iii) Cr^{3+}
- (iv) Mn

Solution:

Option (ii) is the answer.

NAGEEN GROUP
tamso ma jyotirgamaya

9. Use the data given in Q.8 and find out which of the following is the strongest oxidising agent.

- (i) Cl^-
- (ii) Mn^{2+}
- (iii) MnO_4^-
- (iv) Cr^{3+}

Solution:

Option (iii) is the answer.

10. Using the data given in Q.8 find out in which option the order of reducing power is correct.

- (i) $\text{Cr}^{3+} < \text{Cl}^- < \text{Mn}^{2+} < \text{Cr}$
- (ii) $\text{Mn}^{2+} < \text{Cl}^- < \text{Cr}^{3+} < \text{Cr}$
- (iii) $\text{Cr}^{3+} < \text{Cl}^- < \text{Cr}_2\text{O}_7^{2-} < \text{MnO}_4^-$
- (iv) $\text{Mn}^{2+} < \text{Cr}^{3+} < \text{Cl}^- < \text{Cr}$

Solution:

Option (ii) is the answer.

11. Use the data given in Q.8 and find out the most stable ion in its reduced form.

- (i) Cl^-
- (ii) Cr^{3+}
- (iii) Cr
- (iv) Mn^{2+}

Solution:

Option (iv) is the answer.

12. Use the data of Q.8 and find out the most stable oxidised species.

- (i) Cr^{3+}
- (ii) MnO_4^-
- (iii) $\text{Cr}_2\text{O}_7^{2-}$
- (iv) Mn^{2+}

Solution:

Option (i) is the answer.

13. The quantity of charge required to obtain one mole of aluminium from Al_2O_3 is

_____.

- (i) 1F
- (ii) 6F
- (iii) 3F
- (iv) 2F

Solution:

Option (iii) is the answer.

14. The cell constant of a conductivity cell _____.

- (i) changes with the change of electrolyte.
- (ii) changes with the change of concentration of electrolyte.
- (iii) changes with the temperature of the electrolyte.
- (iv) remains constant for a cell.

Solution:

Option (iv) is the answer.

15. While charging the lead storage battery _____.

- (i) PbSO_4 anode is reduced to Pb.

- (ii) PbSO_4 cathode is reduced to Pb.
(iii) (iii) PbSO_4 cathode is oxidised to Pb.
(iv) PbSO_4 anode is oxidised to PbO_2

Solution:

Option (i) is the answer.

16. $\Delta^0_m(\text{NH}_4\text{OH})$ is equal to _____.

- (i) $\Delta^0_m(\text{NH}_4\text{OH}) + \Delta^0_m(\text{NH}_4\text{Cl}) - \Delta^0_m(\text{HCl})$
(ii) $\Delta^0_m(\text{NH}_4\text{Cl}) + \Delta^0_m(\text{NaOH}) - \Delta^0_m(\text{NaCl})$
(iii) $\Delta^0_m(\text{NH}_4\text{Cl}) + \Delta^0_m(\text{NaCl}) - \Delta^0_m(\text{NaOH})$
(iv) $\Delta^0_m(\text{NaOH}) + \Delta^0_m(\text{NaCl}) - \Delta^0_m(\text{NH}_4\text{Cl})$

Solution:

Option (ii) is the answer.

17. In the electrolysis of aqueous sodium chloride solution which of the half cell reaction will occur at anode?

- (i) $\text{Na}^+(\text{aq}) + \text{e}^- \rightarrow \text{Na}(\text{s}) ; E^\circ_{\text{Cell}} = -2.71\text{V}$
(ii) $2\text{H}_2\text{O}(\text{l}) \rightarrow \text{O}_2(\text{g}) + 4\text{H}^+(\text{aq}) + 4\text{e}^- ; E^\circ_{\text{Cell}} = 1.23\text{V}$
(iii) $\text{H}^+(\text{aq}) + \text{e}^- \rightarrow \frac{1}{2}\text{H}_2(\text{g}) ; E^\circ_{\text{Cell}} = 0.00\text{V}$
(iv) $\text{Cl}^-(\text{aq}) \rightarrow \frac{1}{2}\text{Cl}_2(\text{g}) + \text{e}^- ; E^\circ_{\text{Cell}} = 1.36\text{V}$

Solution:

Option (ii) is the answer.

II. Multiple Choice Questions (Type-II)

Note: In the following questions two or more than two options may be correct.

18. The positive value of the standard electrode potential of Cu^{2+}/Cu indicates that _____.

- (i) this redox couple is a stronger reducing agent than the H^+/H_2 couple.
(ii) this redox couple is a stronger oxidising agent than H^+/H_2 .
(iii) Cu can displace H_2 from acid.
(iv) Cu cannot displace H_2 from acid.

Solution:

Option (ii) and (iv) are the answers.

19. E°_{Cell} for some half cell reactions are given below. Based on these mark the correct answer.

- (a) $\text{H}^+(\text{aq}) + \text{e}^- \rightarrow \frac{1}{2}\text{H}_2(\text{g}) ; E^\circ_{\text{cell}} = 0.00\text{V}$
(b) $2\text{H}_2\text{O}(\text{l}) \rightarrow \text{O}_2(\text{g}) + 4\text{H}^+(\text{aq}) + 4\text{e}^- ; E^\circ_{\text{cell}} = 1.23\text{V}$
(c) $2\text{SO}_4^{2-}(\text{aq}) \rightarrow \text{S}_2\text{O}_8^{2-}(\text{aq}) + 2\text{e}^- ; E^\circ_{\text{cell}} = 1.96\text{V}$

- (i) In dilute sulphuric acid solution, hydrogen will be reduced at the cathode.
(ii) In concentrated sulphuric acid solution, water will be oxidised at the anode.
(iii) In dilute sulphuric acid solution, water will be oxidised at the anode.
(iv) In dilute sulphuric acid solution, SO_4^{2-} ion will be oxidised to tetrathionate ion at the anode.

Solution:

Option (i) and (iii) are the answers.

20. E° Cell = 1.1V for Daniel cell. Which of the following expressions are correct description of state of equilibrium in this cell?

- (i) $1.1 = K_c$
- (ii) $2.303RT/2F \log K_c = 1.1$
- (iii) $\log K_c = 2.2/0.059$
- (iv) $\log K_c = 1.1$

Solution:

Option (ii) and (iii) are the answers.

21. Conductivity of an electrolytic solution depends on _____.

- (i) nature of electrolyte.
- (ii) the concentration of electrolyte.
- (iii) power of AC source.
- (iv) distance between the electrodes.

Solution:

Option (i) and (ii) are the answers.

22. Λ_m^0 of H_2O is equal to _____.

- (i) Λ_m^0 of HCl + Λ_m^0 of $NaOH$ - Λ_m^0 of $NaCl$
- (ii) Λ_m^0 of HNO_3 + Λ_m^0 of $NaNO_3$ - Λ_m^0 of $NaOH$
- (iii) Λ_m^0 of HNO_3 + Λ_m^0 of $NaOH$ - Λ_m^0 of $NaNO_3$
- (iv) Λ_m^0 of NH_4OH + Λ_m^0 of HCl - Λ_m^0 of NH_4Cl

Solution:

Option (i) and (iv) are the answers.

23. What will happen during the electrolysis of an aqueous solution of $CuSO_4$ by using platinum electrodes?

- (i) Copper will deposit at the cathode.
- (ii) Copper will deposit at the anode.
- (iii) Oxygen will be released at anode.
- (iv) Copper will dissolve at the anode.

Solution:

Option (i) and (iii) are the answers.

24. What will happen during the electrolysis of an aqueous solution of $CuSO_4$ in the presence of Cu electrodes?

- (i) Copper will deposit at the cathode.
- (ii) Copper will dissolve at the anode.
- (iii) Oxygen will be released at anode.
- (iv) Copper will deposit at the anode.

Solution:

Option (i) and (ii) are the answers

25. Conductivity κ , is equal to _____.

- (i) $1/R I/A$
- (ii) G^*/R
- (iii) Λ_m
- (iv) I/A

Solution:

Option (i) and (ii) are the answers.

26. Molar conductivity of ionic solution depends on _____.

- (i) temperature.
- (ii) distance between electrodes.
- (iii) the concentration of electrolytes in solution.
- (iv) the surface area of electrodes.

Solution:

Option (i) and (iii) are the answers.

27. For the given cell, $Mg|Mg^{2+}|| Cu^{2+}|Cu$

- (i) Mg is cathode
- (ii) Cu is cathode
- (iii) The cell reaction is $Mg + Cu^{2+} \rightarrow Mg^{2+} + Cu$
- (iv) Cu is the oxidising agent

Solution:

Option (ii) and (iii) are the answers.

III. Short Answer Type

28. Can absolute electrode potential of an electrode be measured?

Solution:

No. It cannot be measured. We can only measure the difference in electrode potential between the two half-cells. We can also measure electrode potential difference concerning a standard electrode.

29. Can E°_{cell} or $\Delta_r G^\circ$ for cell reaction ever be equal to zero?

Solution:

E° Cell or $\Delta_r G^\circ$ can never be equal to zero. The only standard electrode potential which is arbitrarily assigned the value zero is the standard hydrogen electrode (SHE). Since everything else is measured concerning SHE; the E° cell can never be zero.

30. Under what condition is $E_{Cell} = 0$ or $\Delta_r G = 0$?

Solution:

Electrolysis happens when a redox reaction occurs. Like all reactions, redox reaction moves towards equilibrium. At equilibrium condition, the cell has discharged completely, and cell potential drops to zero.

$$\Delta rG = -nF E_{cell} = 0$$

31. What does the negative sign in the expression $E^\circ_{Zn^{2+}/Zn} = -0.76V$ mean?

Solution:

A negative value is that hydrogen gas is more stable than the reduced form of species. Here, the reduced

form (Zn) is not stable. It is difficult to reduce Zn^{2+} to Zn . So, the reverse is more likely to happen. Zn would rather get oxidized to Zn^{2+} and H^+ will get reduced

32. Aqueous copper sulphate solution and aqueous silver nitrate solution are electrolysed by 1 ampere current for 10 minutes in separate electrolytic cells. Will, the mass of copper and silver, deposited on the cathode be the same or different? Explain your answer.

Solution:

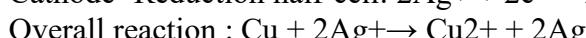
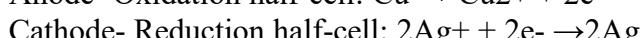
$$W = itE/96500$$

$$= 1 \times 10 \times 60 \times 31.75 / 96500$$

Equivalent mass of Cu^{2+} is different from the equivalent mass of Ag^+ so obviously the mass of copper deposited will not be the same as the mass of silver deposited.

33. Depict the galvanic cell in which the cell reaction is $Cu + 2Ag^+ \rightarrow 2Ag + Cu^{2+}$

Solution:



34. Value of standard electrode potential for the oxidation of Cl^- ions is more positive than that of water, even then in the electrolysis of aqueous sodium chloride, why is Cl^- oxidised at anode instead of water?

Solution:

The oxidation of water to oxygen is kinetically unfavourable and requires excess potential called over-potential. Over-potential is the excess potential required to drive a reaction at a particular rate.

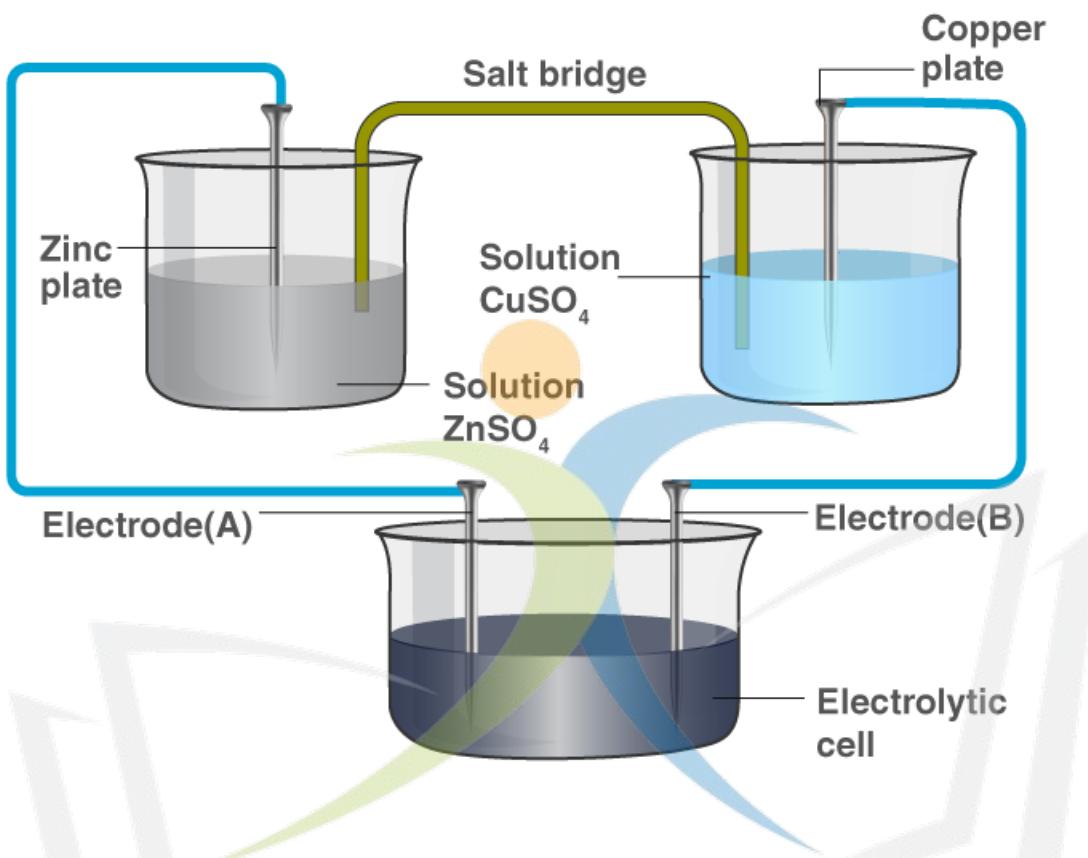
35. What is electrode potential?

Solution:

The potential difference developed between an electrode and electrolyte is called the electrode potential. Standard electrode potential will be always reduction potential.

36. Consider the following diagram in which an electrochemical cell is coupled to an electrolytic cell. What will be the polarity of electrodes 'A' and 'B' in the electrolytic cell?

NAGEEN GROUP
tamso ma jyotirgamaya



Solution:

Zinc goes into solution as Zn^{2+} and leaves behind the electrons on Electrode A making it negatively charged. Cu^{2+} from the solution deposits on Electrode B making it positively charged.

Electrode A polarity- negative

Electrode B polarity- positive.

37. Why is alternating current used for measuring the resistance of an electrolytic solution?

Solution:

The alternating current keeps the concentration of ions constant whereas direct current changes the concentration of ions. That is why alternating current used for measuring the resistance of an electrolytic solution.

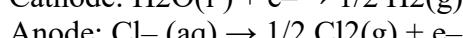
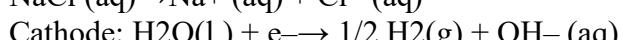
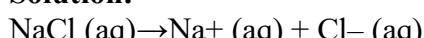
38. A galvanic cell has an electrical potential of 1.1V. If an opposing potential of 1.1V is applied to this cell, what will happen to the cell reaction and current flowing through the cell?

Solution:

The cell reaction stops and there will be no flow of current through the cell when the opposing potential becomes equal to electrical potential. Therefore no chemical reaction takes place.

39. How will the pH of brine (aq. NaCl solution) be affected when it is electrolyzed?

Solution:



Overall reaction: $\text{NaCl}(\text{aq}) + \text{H}_2\text{O(l)} \rightarrow \text{NaOH}(\text{aq}) + \text{H}_2(\text{g}) + \text{Cl}_2(\text{g})$
NaOH is a strong base, they turn the brine solution basic and pH will increase.

40. Unlike dry cell, the mercury cell has a constant cell potential throughout its useful life. Why?

Solution:

The electrolyte is not consumed in the cell and thus the current will deliver at constant potential throughout,

overall reaction contains no ions whose concentration can change over time. So, the cell potential remains constant throughout the mercury cell life.

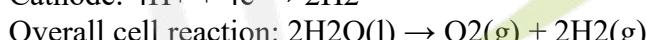
41. Solutions of two electrolytes 'A' and 'B' are diluted. The of 'B' increases 1.5 times while that of A increases 25 times. Which of the two is a strong electrolyte? Justify your answer.

Solution:

Electrolyte B is strong as on dilution the number of ions remains the same, only interionic attraction decreases; therefore, the increase in Δm is small.

42. When acidulated water (dil. H_2SO_4 solution) is electrolysed, will the pH of the solution be affected? Justify your answer.

Solution:



pH remains the same because concentration of H^+ ions remains constant.

43. In an aqueous solution, how does specific conductivity of electrolytes change with the addition of water?

Solution:

The addition of water dilutes the electrolyte. The number of ions in a given volume decreases and conductivity also reduces.

44. Which reference electrode is used to measure the electrode potential of other electrodes?

Solution:

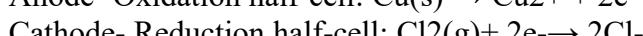
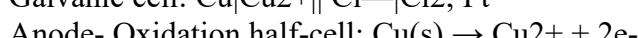
Standard hydrogen electrode (SHE) is used as a reference electrode. The potential of SHE is assigned the value zero. The electrode potential of other electrodes is measured with respect to this.

45. Consider a cell given below



Write the reactions that occur at anode and cathode.

Solution:

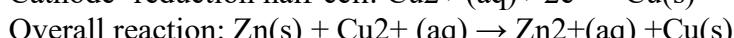
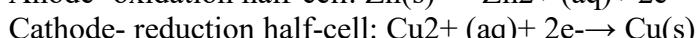
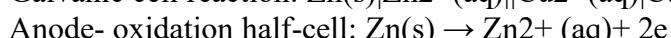
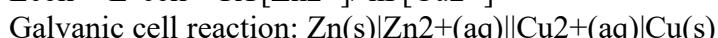


Thus, Cu is anode as it is getting oxidised.

46. Write the Nernst equation for the cell reaction in the Daniel cell. How will the ECell be affected when the concentration of Zn^{2+} ions is increased?

Solution:

$$E_{\text{cell}} = E^{\circ}_{\text{cell}} - \frac{RT}{nF} [\text{Zn}^{2+}] / [\text{Cu}^{2+}]$$

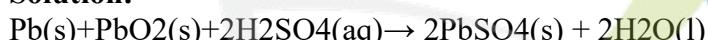


$[\text{Zn}^{2+}]$ and $[\text{Cu}^{2+}]$ are the concentration of the Zn^{2+} and Cu^{2+} ion in the solution.

$$E_{\text{cell}} = E^{\circ}_{\text{cell}} - \frac{0.059}{2} \log \frac{[\text{Zn}^{2+}]}{[\text{Cu}^{2+}]}$$

47. What advantage do the fuel cells have over primary and secondary batteries?**Solution:**

Fuel cells are cells that convert the energy of combustion of fuels like hydrogen, methanol into electrical energy. Fuel cells run continuously as long as reactants are supplied. Primary batteries discharge and are one-time use only, and secondary batteries can be recharged, but recharging takes a lot of time.

48. Write the cell reaction of a lead storage battery when it is discharged. How does the density of the electrolyte change when the battery is discharged?**Solution:**

Density decreases as the product water form dilute the H_2SO_4 concentration during the discharge of the battery.

49. Why on dilution the Δ_m of CH_3COOH increases drastically, while that of CH_3COONa increases gradually?**Solution:**

CH_3COOH is a weak electrolyte and CH_3COONa is a strong electrolyte. A weak electrolyte has a lower degree of dissociation at higher concentration but upon dilution, the degree of dissociation increases, the number of ions per unit volume increases and this lead to an increase in.

CLICK TO DOWNLOAD NCERT EXEMPLAR SOLUTIONS

CLASS 12: CHEMISTRY (ALL CHAPTERS)





JOIN OUR WHATSAPP GROUPS

FOR FREE EDUCATIONAL
RESOURCES





JOIN SCHOOL OF EDUCATORS WHATSAPP GROUPS FOR FREE EDUCATIONAL RESOURCES

We are thrilled to introduce the School of Educators WhatsApp Group, a platform designed exclusively for educators to enhance your teaching & Learning experience and learning outcomes. Here are some of the key benefits you can expect from joining our group:

BENEFITS OF SOE WHATSAPP GROUPS

- **Abundance of Content:** Members gain access to an extensive repository of educational materials tailored to their class level. This includes various formats such as PDFs, Word files, PowerPoint presentations, lesson plans, worksheets, practical tips, viva questions, reference books, smart content, curriculum details, syllabus, marking schemes, exam patterns, and blueprints. This rich assortment of resources enhances teaching and learning experiences.
- **Immediate Doubt Resolution:** The group facilitates quick clarification of doubts. Members can seek assistance by sending messages, and experts promptly respond to queries. This real-time interaction fosters a supportive learning environment where educators and students can exchange knowledge and address concerns effectively.
- **Access to Previous Years' Question Papers and Topper Answers:** The group provides access to previous years' question papers (PYQ) and exemplary answer scripts of toppers. This resource is invaluable for exam preparation, allowing individuals to familiarize themselves with the exam format, gain insights into scoring techniques, and enhance their performance in assessments.

- **Free and Unlimited Resources:** Members enjoy the benefit of accessing an array of educational resources without any cost restrictions. Whether its study materials, teaching aids, or assessment tools, the group offers an abundance of resources tailored to individual needs. This accessibility ensures that educators and students have ample support in their academic endeavors without financial constraints.
- **Instant Access to Educational Content:** SOE WhatsApp groups are a platform where teachers can access a wide range of educational content instantly. This includes study materials, notes, sample papers, reference materials, and relevant links shared by group members and moderators.
- **Timely Updates and Reminders:** SOE WhatsApp groups serve as a source of timely updates and reminders about important dates, exam schedules, syllabus changes, and academic events. Teachers can stay informed and well-prepared for upcoming assessments and activities.
- **Interactive Learning Environment:** Teachers can engage in discussions, ask questions, and seek clarifications within the group, creating an interactive learning environment. This fosters collaboration, peer learning, and knowledge sharing among group members, enhancing understanding and retention of concepts.
- **Access to Expert Guidance:** SOE WhatsApp groups are moderated by subject matter experts, teachers, or experienced educators who can benefit from their guidance, expertise, and insights on various academic topics, exam strategies, and study techniques.

Join the School of Educators WhatsApp Group today and unlock a world of resources, support, and collaboration to take your teaching to new heights. To join, simply click on the group links provided below or send a message to +91-95208-77777 expressing your interest.

**Together, let's empower ourselves & Our Students and
inspire the next generation of learners.**

**Best Regards,
Team
School of Educators**

Join School of Educators WhatsApp Groups

You will get Pre- Board Papers PDF, Word file, PPT, Lesson Plan, Worksheet, practical tips and Viva questions, reference books, smart content, curriculum, syllabus, marking scheme, toppers answer scripts, revised exam pattern, revised syllabus, Blue Print etc. here . Join Your Subject / Class WhatsApp Group.

Kindergarten to Class XII (For Teachers Only)



[Click Here to Join](#)

Class 1



[Click Here to Join](#)

Class 2



[Click Here to Join](#)

Class 3



[Click Here to Join](#)

Class 4



[Click Here to Join](#)

Class 5



[Click Here to Join](#)

Class 6



[Click Here to Join](#)

Class 7



[Click Here to Join](#)

Class 8



[Click Here to Join](#)

Class 9



[Click Here to Join](#)

Class 10



[Click Here to Join](#)

Class 11 (Science)



[Click Here to Join](#)

Class 11 (Humanities)



[Click Here to Join](#)

Class 11 (Commerce)



[Click Here to Join](#)

Class 12 (Science)



[Click Here to Join](#)

Class 12 (Humanities)



[Click Here to Join](#)

Class 12 (Commerce)



[Click Here to Join](#)

Kindergarten

Subject Wise Secondary and Senior Secondary Groups (IX & X For Teachers Only)

Secondary Groups (IX & X)



[Click Here to Join](#)

SST



[Click Here to Join](#)

Mathematics



[Click Here to Join](#)

Science



[Click Here to Join](#)

English



[Click Here to Join](#)

Hindi-A



[Click Here to Join](#)

IT Code-402



[Click Here to Join](#)

Hindi-B



[Click Here to Join](#)

Artificial Intelligence

Senior Secondary Groups (XI & XII For Teachers Only)



[Click Here to Join](#)

Physics



[Click Here to Join](#)

Chemistry



[Click Here to Join](#)

English



[Click Here to Join](#)

Mathematics



[Click Here to Join](#)

Biology



[Click Here to Join](#)

Accountancy



[Click Here to Join](#)

Economics



[Click Here to Join](#)

BST



[Click Here to Join](#)

History

[Click Here to Join](#)Geography[Click Here to Join](#)Sociology[Click Here to Join](#)Hindi Elective[Click Here to Join](#)Hindi Core[Click Here to Join](#)Home Science[Click Here to Join](#)Sanskrit[Click Here to Join](#)Psychology[Click Here to Join](#)Political Science[Click Here to Join](#)Painting[Click Here to Join](#)Vocal Music[Click Here to Join](#)Comp. Science[Click Here to Join](#)IP[Click Here to Join](#)Physical Education[Click Here to Join](#)APP. Mathematics[Click Here to Join](#)Legal Studies[Click Here to Join](#)Entrepreneurship[Click Here to Join](#)French[Click Here to Join](#)IT[Click Here to Join](#)Artificial Intelligence

Other Important Groups (For Teachers & Principal's)

[Click Here to Join](#)Principal's Group[Click Here to Join](#)Teachers Jobs[Click Here to Join](#)IIT/NEET

Join School of Educators WhatsApp Groups

You will get Pre- Board Papers PDF, Word file, PPT, Lesson Plan, Worksheet, practical tips and Viva questions, reference books, smart content, curriculum, syllabus, marking scheme, toppers answer scripts, revised exam pattern, revised syllabus, Blue Print etc. here . Join Your Subject / Class WhatsApp Group.

Kindergarten to Class XII (For Students Only)



[Click Here to Join](#)

Class 1



[Click Here to Join](#)

Class 2



[Click Here to Join](#)

Class 3



[Click Here to Join](#)

Class 4



[Click Here to Join](#)

Class 5



[Click Here to Join](#)

Class 6



[Click Here to Join](#)

Class 7



[Click Here to Join](#)

Class 8



[Click Here to Join](#)

Class 9



[Click Here to Join](#)

Class 10



[Click Here to Join](#)

Class 11 (Science)



[Click Here to Join](#)

Class 11 (Humanities)



[Click Here to Join](#)

Class 11 (Commerce)



[Click Here to Join](#)

Class 12 (Science)



[Click Here to Join](#)

Class 12 (Commerce)

Artificial Intelligence

(VI TO VIII)

Subject Wise Secondary and Senior Secondary Groups (IX & X For Students Only)

Secondary Groups (IX & X)



[Click Here to Join](#)

SST



[Click Here to Join](#)

Mathematics



[Click Here to Join](#)

Science



[Click Here to Join](#)

English



[Click Here to Join](#)

Hindi



[Click Here to Join](#)

IT Code



[Click Here to Join](#)

Artificial Intelligence

Senior Secondary Groups (XI & XII For Students Only)



[Click Here to Join](#)

Physics



[Click Here to Join](#)

Chemistry



[Click Here to Join](#)

English



[Click Here to Join](#)

Mathematics



[Click Here to Join](#)

Biology



[Click Here to Join](#)

Accountancy



[Click Here to Join](#)

Economics



[Click Here to Join](#)

BST



[Click Here to Join](#)

History



[Click Here to Join](#)

Geography



[Click Here to Join](#)

Sociology



[Click Here to Join](#)

Hindi Elective



[Click Here to Join](#)

Hindi Core



[Click Here to Join](#)

Home Science



[Click Here to Join](#)

Sanskrit



[Click Here to Join](#)

Psychology



[Click Here to Join](#)

Political Science



[Click Here to Join](#)

Painting



[Click Here to Join](#)

Music



[Click Here to Join](#)

Comp. Science



[Click Here to Join](#)

IP



[Click Here to Join](#)

Physical Education



[Click Here to Join](#)

APP. Mathematics



[Click Here to Join](#)

Legal Studies



[Click Here to Join](#)

Entrepreneurship



[Click Here to Join](#)

French



[Click Here to Join](#)

IT



[Click Here to Join](#)

AI



[Click Here to Join](#)

IIT/NEET



[Click Here to Join](#)

CUET

Groups Rules & Regulations:

To maximize the benefits of these WhatsApp groups, follow these guidelines:

1. Share your valuable resources with the group.
2. Help your fellow educators by answering their queries.
3. Watch and engage with shared videos in the group.
4. Distribute WhatsApp group resources among your students.
5. Encourage your colleagues to join these groups.

Additional notes:

1. Avoid posting messages between 9 PM and 7 AM.
2. After sharing resources with students, consider deleting outdated data if necessary.
3. It's a NO Nuisance groups, single nuisance and you will be removed.
 - No introductions.
 - No greetings or wish messages.
 - No personal chats or messages.
 - No spam. Or voice calls
 - Share and seek learning resources only.

Please only share and request learning resources. For assistance, contact the helpline via WhatsApp: +91-95208-77777.

Join Premium WhatsApp Groups Ultimate Educational Resources!!

Join our premium groups and just Rs. 1000 and gain access to all our exclusive materials for the entire academic year. Whether you're a student in Class IX, X, XI, or XII, or a teacher for these grades, Artham Resources provides the ultimate tools to enhance learning. Pay now to delve into a world of premium educational content!

[**Click here for more details**](#)



[Click Here to Join](#)

Class 9



[Click Here to Join](#)

Class 10



[Click Here to Join](#)

Class 11



[Click Here to Join](#)

Class 12

► Don't Miss Out! Elevate your academic journey with top-notch study materials and secure your path to top scores! Revolutionize your study routine and reach your academic goals with our comprehensive resources. Join now and set yourself up for success! 📚⭐

Best Wishes,

Team

School of Educators & Artham Resources

SKILL MODULES BEING OFFERED IN MIDDLE SCHOOL



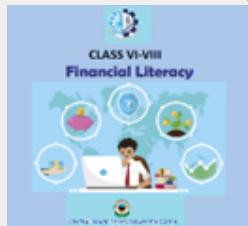
Artificial Intelligence



Beauty & Wellness



Design Thinking & Innovation



Financial Literacy



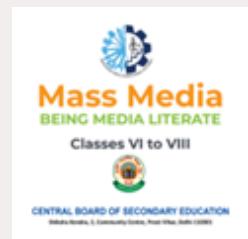
Handicrafts



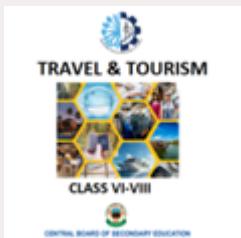
Information Technology



Marketing/Commercial Application



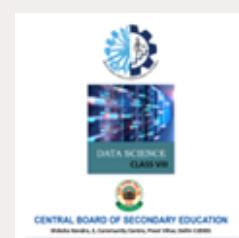
Mass Media - Being Media Literate



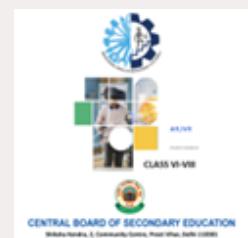
Travel & Tourism



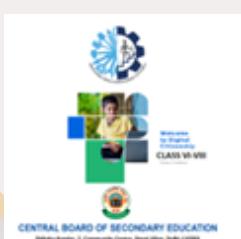
Coding



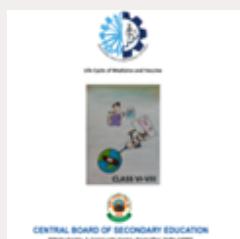
Data Science (Class VIII only)



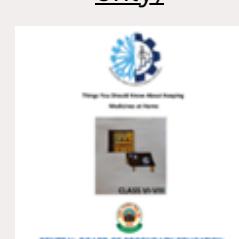
Augmented Reality/Virtual Reality



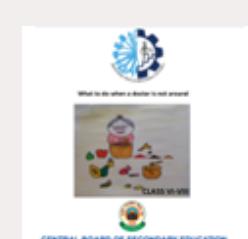
Digital Citizenship



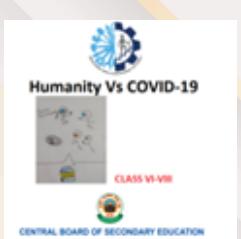
Life Cycle of Medicine & Vaccine



Things you should know about keeping Medicines at home



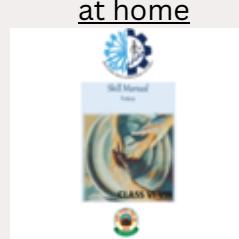
What to do when Doctor is not around



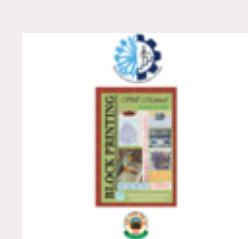
Humanity & Covid-19



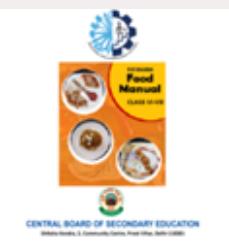
Blue Pottery



Pottery



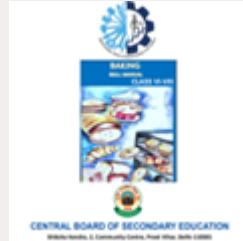
Block Printing



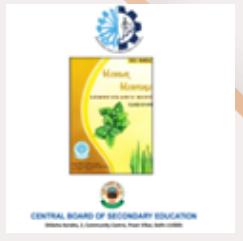
Food



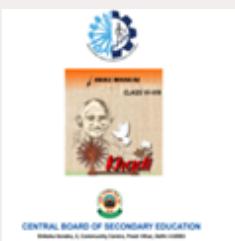
Food Preservation



Baking



Herbal Heritage



Khadi



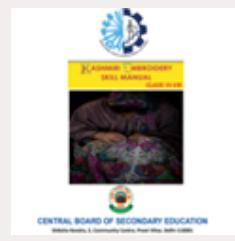
Mask Making



Mass Media



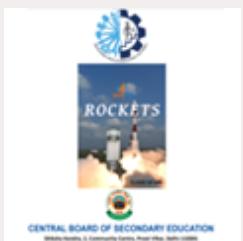
Making of a Graphic Novel



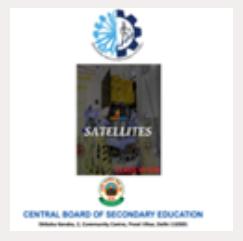
Kashmiri Embroidery



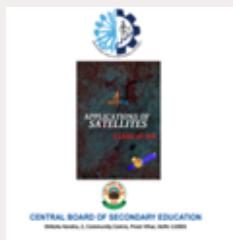
Embroidery



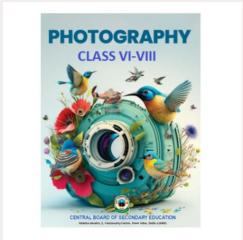
Rockets



Satellites

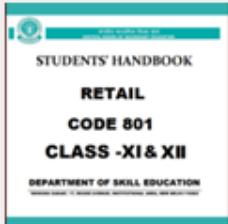


Application of Satellites

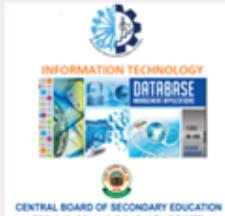


Photography

SKILL SUBJECTS AT SR. SEC. LEVEL (CLASSES XI – XII)



Retail



Information Technology



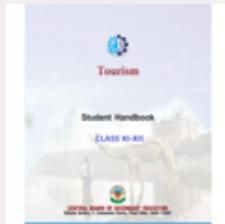
Web Application



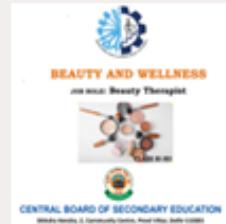
Automotive



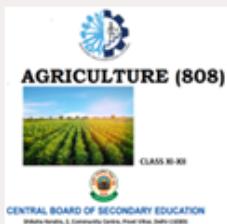
Financial Markets Management



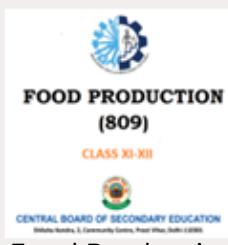
Tourism



Beauty & Wellness



Agriculture



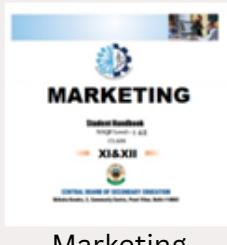
Food Production



Front Office Operations



Banking



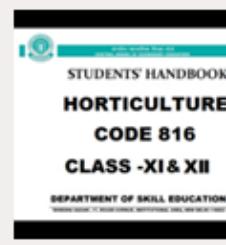
Marketing



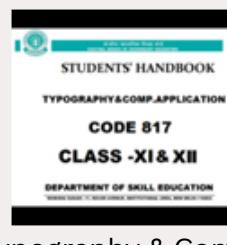
Health Care



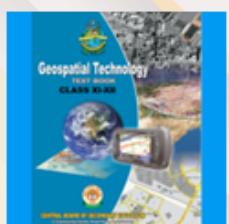
Insurance



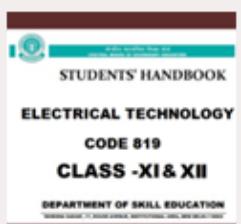
Horticulture



Typography & Comp.
Application



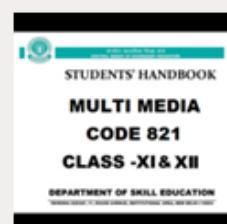
Geospatial Technology



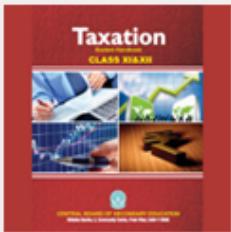
Electrical Technology



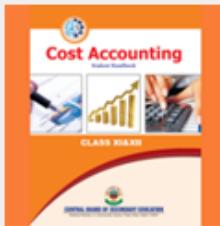
Electronic Technology



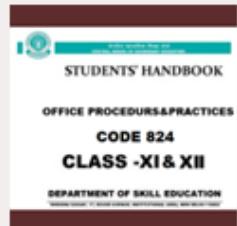
Multi-Media



Taxation



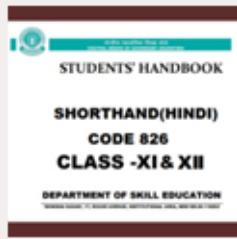
Cost Accounting



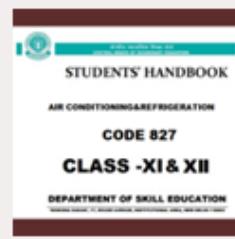
Office Procedures & Practices



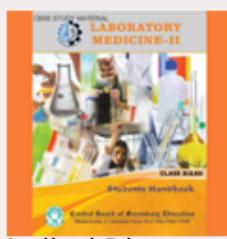
Shorthand (English)



Shorthand (Hindi)



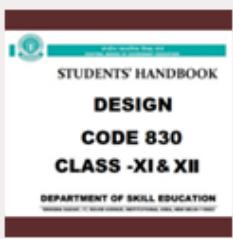
Air-Conditioning & Refrigeration



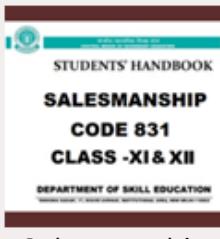
Medical Diagnostics



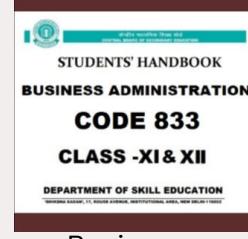
Textile Design



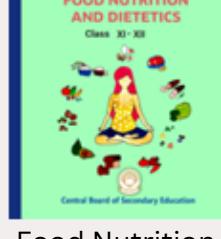
Design



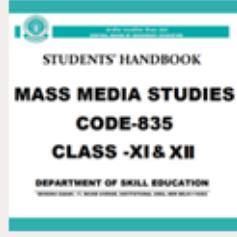
Salesmanship



Business Administration



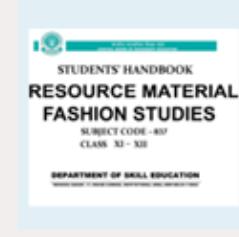
Food Nutrition & Dietetics



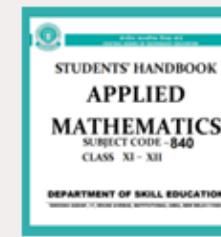
Mass Media Studies



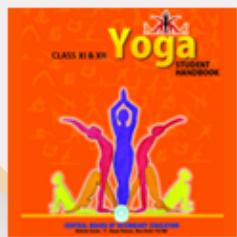
Library & Information Science



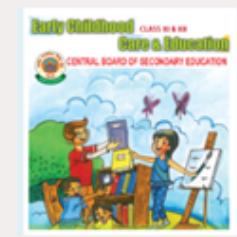
Fashion Studies



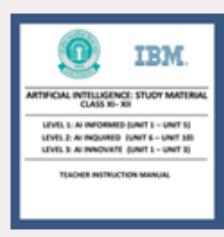
Applied Mathematics



Yoga



Early Childhood Care & Education



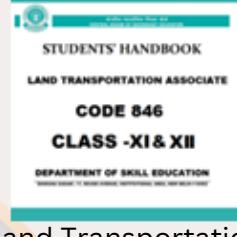
Artificial Intelligence



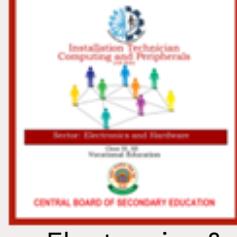
Data Science



Physical Activity Trainer (new)



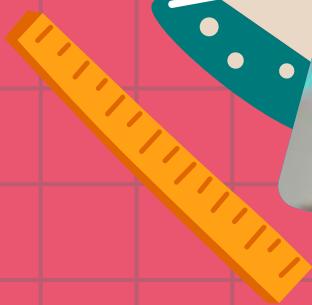
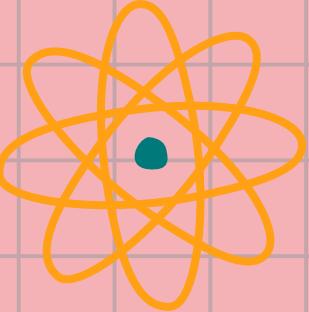
Land Transportation Associate (NEW)



Electronics & Hardware (NEW)



Design Thinking & Innovation (NEW)



- Pdf Purchase
- Print Purchase
- Amazon Print Purchase



Scan QR Code to join
Telegram Groups &
Channels for more free
resources.

